

REMARKS

In the present Amendment, claims 1, 4 and 6-8 have been cancelled without prejudice or disclaimer. Claims 9 and 12 have been amended to recite that only glucans which are non-rubber components are separable and removed. Support for the amendment is found, for example, at page 13, lines 17-22 of the specification. No new matter has been added, and entry of the Amendment as canceling claims and to place the present application in condition for allowance is respectfully requested.

Upon entry of the Amendment, claims 9-14 and 20 will be pending.

In paragraph No. 3 of the Action, claims 1, 4, 6-14 and 20 are rejected under 35 U.S.C. § 102(b or e) as allegedly being anticipated by or, in the alternative, under 35 U.S.C. §103(a) as allegedly being unpatentable over Kawamura et al (US 6,344,499) or Galimberti et al (US 2003/0109625).

In paragraph No. 4 of the Action, claims 1, 4, 6-10, 12-14 and 20 are rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by or, in the alternative, under 35 U.S.C. §103(a) as allegedly being unpatentable over Ichikawa et al (US 2004/0014876).

The above two rejections should be withdrawn because Kawamura et al, Galimberti et al and Ichikawa et al do not disclose or render obvious the presently claimed invention.

Present claims as amended require that enzyme treatment with an α -amylase and/or a cellulase is carried out for the decomposition of the glucans and that only glucans which are non-rubber components are separable and removed.

Applicant in the paragraph bridging pages 8 and 9 of the specification discloses:

Usually, non-rubber components are present in such natural rubber, and among them, glucans such as sugar components and

vegetable fibers which exert an adverse effect on the rubber physical properties such as a low hysteresis loss property and an abrasion resistance are present as the non-rubber components. ... Further, if non-rubber components are completely removed as is the case with conventional protein-removing techniques, it is likely that the revelation of strain induced crystallization and the accelerating effect are damaged and that the antioxidant effect and the vulcanization-accelerating effect are damaged as well. ...

Also, Applicant at page 13, lines 17-22 of the specification discloses:

In such latex treatment, non-rubber components can not completely be separated as is the case with conventional protein treating techniques. Only glucans which are non-rubber components are separable and can be allowed to flow out or removed during the treatment.

Non-rubber components in a natural rubber are proteins, glucans, lipids and the like. If all non-rubber components are completely removed from a natural rubber, an ill effect is exerted on the rubber properties such as antioxidant effect and vulcanization-accelerating effect. However, when only glucans such as sugar components and vegetable fibers are removed from a natural rubber, the rubber physical properties such as low hysteresis loss property and abrasion resistance are improved without damaging the antioxidant property and the vulcanization accelerating property. If non-rubber components are completely removed from a natural rubber as in the case of conventional protein-removing techniques described in the cited documents, the natural rubber will lose rubber properties such as antioxidant effect and vulcanization-accelerating effect.

Since the rubbers in Ichikawa et al and Kawamura et al are subject to conventional deproteinization treatment the natural rubbers therein loses rubber properties such as antioxidant effect and vulcanization-accelerating effect.

As to Galimberti et al, which discloses the use of hydrophilic polymers in elastomeric compositions, the hydrophilic polymers are destructured starch which comprises amylase and amylopectine ([0009]). The Examiner considers that the destructured starch reads on the claimed decomposed glucans.

However, the present claims as amended require that the glucans contained in the natural rubber latex are decomposed by the enzyme treatment with α -amylase and/or cellulase and that the glucans are decomposed and removed. The present claims do not recite a natural rubber latex containing decomposed glucans.

Accordingly, Galimberti et al does not teach or suggest the present claims.

In view of the above, reconsideration and withdrawal of the rejections based on Kawamura et al or Galimberti et al or Ichikawa et al are respectfully requested.

Allowance is respectfully requested. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

AMENDMENT UNDER 37 C.F.R. § 1.116
Application No.: 10/537,698

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The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE

23373

CUSTOMER NUMBER

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Hui Chen Wauters
Hui C. Wauters
Registration No. 57,426